

usually is in the Little Stint, but involves initiation in the middle of the primary tract.

In Fig. 2b the manner of replacement of the juvenile wing feathers of the three species in Kenya is compared. A distinction is made between first year moult corresponding to adult pre-nuptial moult, and 'additional' first year moult. The Common Sandpiper appears to show an intermediate stage in the evolution of a complete first winter wing moult from mere outer primary renewal.

SUMMARY

First year Common Sandpipers wintering in Kenya moult their flight-feathers between January and March. Moult initially proceeds outwards from the middle of the primary tract, but in many birds at least the innermost feathers are also eventually replaced. Secondary moult is usually complete, but occurs rapidly and somewhat randomly. The tertials, tail, inner greater and median coverts, lesser coverts and body feathers of young birds are replaced between January and March by spring feathers, just as they are in adults. However, the alula and the rest of the wing coverts are usually renewed also. As regards the extent and pattern of wing moult in first year birds, the Common Sandpiper appears to occupy a position intermediate between the Wood Sandpiper and the Little Stint.

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THE MADAGASCAR PRATINCOLE *GLAREOLA OCULARIS* IN AFRICA

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INTRODUCTION

The few breeding records of the Madagascar Pratincole *Glareola ocularis* refer to laying on rocks in northeast Madagascar in October-November, though the majority of Madagascar records are from the southwest in December-March, including birds moving west in February-March;

it has been recorded in Madagascar only between 27 September and 29 March (Keith, Forbes-Watson & Turner in press). The few records from elsewhere in the Malagasy region are from the Comores in October (Forbes-Watson 1969). Rand (1936) gives no indication that it is migratory, but the more recent data cited show that it is absent from Madagascar between March and September, possibly arriving via the Comores and leaving from the south-west.

In his review of its status in Africa, Moreau (1966) mentioned its presence in substantial numbers in coastal Kenya in August-September, as well as its occurrence in coastal Tanzania and Somalia. He knew of no April-July records and speculated on the existence of an undiscovered non-breeding area. Granvik (1923) collected two from hundreds at Kendu Bay, on the Kavirondo Gulf of Lake Victoria, on 21-22 August 1920, but its occurrence inland is exceptional. Six at Sinya, Tanzania, on 23 May 1973 (Harvey 1973) and one at Dubte, Ethiopia, on 29 October 1973 (Ash 1977) are the only subsequent inland records. Benson (1971) has shown that its reported occurrence on the Zambezi River is erroneous, and that the most southerly authentic African records are from Mikindani in extreme southeast Tanzania, on 25 September 1965 (two) and 8 October 1964 (not 1967 as given by Benson, G.F. Mees *in litt.*). The minimal details available for two birds at Kendu on 6 October 1976 are not at all convincing (C. Eddy *in litt.*). As a resident of Dar es Salaam, Tanzania, Harvey (1973, 1974) recorded it in two out of three Aprils and one out of four Augusts (7-22 April, 20-28 August); and H.F.I. Elliott (in Moreau 1966) had recorded it there in August to September (one year). The data presented below show that one regular off-season area is in coastal Kenya, at the mouth of the Sabaki River, where Meadows (1974) saw one on 18 June 1974.

OBSERVATIONS

The Sabaki River mouth (=Sabaki) and the dunes along the 5 km stretch of shore between the river and Malindi have been recognized as regular resting sites for flocks of hundreds each August, when it is assumed that they have been on passage. This bias results from August being a holiday month for people living in Kenya and neighbouring countries, together with the fact that feeding pratincoles are especially numerous and conspicuous in August and early September, regularly as far afield as the Arabuko-Sokoke Forest, Mida Creek and Ngomeni. Twice-monthly counts at Sabaki between July 1973 and October 1977, are summarized below, showing clearly that this is a regular off-season site for a flock of 800 or more, as well as a gathering or resting area for migrants, which may swell the numbers to 3500 or more.

1973: 8 July - 16 September: up to 300.

1974: 19 May - 22 September: up to 500 in August, 200 on 8 June.

1975: 14 April - 21 September: up to 900 in mid-April (P. Agland *in litt.*), 160 on 31 May, 750 on 15 June, 700 on 25 August, 300-400 on 13 September (D.J. Pearson *in litt.*), 90 on 21 September.

1976: 29 April - 26 September: 450 on 22 May, 800 regularly 20 June - 12 August, 1500 in a single flock on 11 September; J.S. Ash (*in litt.*) estimated 2000+ on 19 September, when 650 left SE, but numbers declined rapidly after this, to only 8 on 26 September.

1977: 4 April - 30 September: 4 on 4 April (D.J. Pearson *in litt.*), 200 on 23 April, 350 on 21 May, 800 on 29 May, 200 on 25 June,

600 on 23 July, 3500 together on 12 August, 2000 on 16 September (P.G. Kaestner pers. comm.), 450 on 24 September; 6 on 28 September and one on 30 September (W.P.H. Duffus pers. comm.).

None of these counts is likely to represent the total population in the Malindi-Sabaki area. As aerial feeders, often at considerable height, they are only at all conspicuous in heavy rain or overcast weather when they feed at lower levels. Typically they are found resting on firm, level areas in dunes or on the exposed mud-flats of the river at all times of the day, and they are easily overlooked behind dunes, even if one is as close as 100m. Numbers may be fairly stable between May and July, and certainly less erratic than the counts suggest. The better counts for 1975-77 are unlikely to reflect any real increase. The configuration of the river mouth changes after major floods, and all these good counts are from an area of recently created habitat (flooded but now dry apart from pools at spring tides) seaward of the line of high dunes on the north shore.

There are few recent records from north of Sabaki and Ngomeni, and small numbers near Garsen on 1 September 1971 and 26 August 1972 are my only sightings on several overland visits to Lamu in August-September, including two visits to Kiunga and three brief visits to Kipini at the mouth of the Tana River. Jackson (1938) believed that the large southward-moving flocks which he saw on several evenings at Lamu and Mkonumbi in August-September (mainly September) were looking for open roosting ground rather than migrating. He also mentions a bird collected on the Tana River at Ngao in September, but it was not recorded on the lower Tana by Andrews, Groves & Horne (1975) in July-August, nor by the 1976 Tana River Expedition in September (K.L. Campbell pers. comm.). There is most probably a major off-season area north of the Tana River, perhaps in the Lamu archipelago, with its numerous creeks and abundant littoral habitat; but it might be at one of the river mouths in neighbouring Somalia. The only dated Somalia records traced are the two sub-adults collected on the lower Shebili River at 2°48'N. on 25 May and 3 June 1939 (Moltoni, 1941) - dates which suggest that there is an off-season area in Somalia, though it has not been possible to gauge their regularity or abundance from the inadequate data in this and other Italian publications.

The only published Kenya record from south of the Malindi-Sabaki area is from Gazi (undated) in van Someren (1933). As a resident on the south side of Mtwapa Creek, near Mombasa, I have observed flocks moving south on September afternoons and evenings (before dusk) in 1973 (up to 65, 15th, 17th, 20th), 1974 (up to 85, 8th, 16th, 24th, 29th), 1976 (up to 230, 16th, 18th, 24th) and 1977 (up to 115, 2nd, 6th, 8th, 10th, 15th, 16th). A flock of 35 flew south across the channel between Shimoni and Wasin Island (near the Tanzania border) on 2 September 1976. The only records suggestive of northward passage are a flock of 400 feeding over the main Mtwapa-Kilifi road on the evening of 9 April 1976 (A.J. Diamond and D.J. Pearson *in litt.*) and the April 1975 flocks at Sabaki. Into-wind passage in September is probably lower and more readily observed than northward passage in April.

CONCLUSIONS

The migration pattern of the Madagascar Pratincole is now well established, breeding soon after arrival in Madagascar in October-November, and leaving the island in March, so that virtually the whole life-cycle is

spent under favourable climatic conditions. Their stay in coastal Kenya spans the prolonged April-August wet season, which presumably ensures a plentiful supply of aerial insects throughout (the Common Pratincole *Glareola pratincola* is a breeding visitor at Sabaki and Ngomeni, with all dated records falling within the extremes for the Madagascar Pratincole). African entry and exit points are not well established, though they are very likely in Tanzania, possibly leaving from a more northerly point. The prevailing south-easterly air-flow favours the northerly crossing in March-April but hinders the return crossing in September-October. In view of the above, it is curious that breeding should take place so soon after arrival, when birds might be expected to be exhausted. Except for the sea-crossing, they no doubt feed on passage, and the Comores are ideally positioned as an intermediate feeding area.

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